

From: [Jay Field](#)
To: [Robert Gensemer](#)
Cc: [Burt Shephard/R10/USEPA/US@EPA](#); [Joe Goulet/R10/USEPA/US@EPA](#); [Eric Blischke/R10/USEPA/US@EPA](#); [Carrie Smith](#)
Subject: Re: FW: Bioassay Interpretation at Portland Harbor
Date: 06/16/2009 09:21 AM

Bob,
from your email, I gather that if no statistical difference for the endpoint, the classification for that sample was Level 0. Is that a correct interpretation of the approach you used? Was this approach from guidance provided to LWG or directly from MacDonald/Landrum?
Jay

Robert Gensemer wrote:

Burt and others: After our conversation yesterday, Carrie went through Jay's latest spreadsheet and used his "TRUE" "FALSE" statistical significance designations to change individual toxicity "hits" to "no-hits" if, for that particular sample and toxicity endpoint, there was not a significant difference from negative controls ("FALSE" designations). She also then used these changes to recalculate the "maximum" hit level for each individual sample location. As Jay indicated a few days ago, this only changed 29 "hit" samples into "no-hits", and these were mostly for level 1 toxicity (minor). Three level 2 sample locations turned into level 1s. Her revised spreadsheet is attached with all these designations embedded. If anyone has questions about how those were done, give Carrie a call--she can explain it better than I can!

She also created a new DBF and LYR file that takes into account these statistical changes, with the same symbology as in the original layer that Ben and Jay created for the EPA retreat, but with data points circled if the designation changed owing to statistical significance. So you will mostly see green sample points with circles around them (29 of them) that show where maximum toxicity designations for those particular sites changed from some hit level to "no-hit." As you surmised, Burt, from my initial scan, these are not clustered in any particular location or AOPC, and so this probably will not change our AOPC decisions all that much. I'll keep looking, but for now, I see nothing that would be a real game changer.

Instructions for adding the new layer are given in the e-mail from Carrie immediately prior to this one in the string. Give us a call if you have any questions. Go ahead and distribute more widely if you like, Eric.

And thanks to Carrie for the quick work!
-Bob

-----Original Message-----

From: Carrie Smith
Sent: Tuesday, June 16, 2009 8:39 AM
To: Robert Gensemer
Subject: RE: Bioassay Interpretation at Portland Harbor

Try this. Save both the dbf and the lyr file to wherever you like (same location), then just add the lyr file. Excel file is also attached.

Carrie

-----Original Message-----

From: Carrie Smith
Sent: Monday, June 15, 2009 4:25 PM
To: Robert Gensemer
Subject: RE: Bioassay Interpretation at Portland Harbor

Sounds good. Incidentally, 32 sites ended up with a different "max" score as a result of the significance test. The breakdown was as follows:

24 "1s" changed to "0s"
3 "2s" changed to "1s"
4 "2s" changed to "0s"
1 "3" changed to a "0"

Show ya tomorrow. Have a good night.

Carrie

-----Original Message-----

From: Jay Field [<mailto:Jay.Field@noaa.gov>]
Sent: Friday, June 12, 2009 4:16 PM
To: Blischke.Eric@epamail.epa.gov
Cc: Shephard.Burt@epamail.epa.gov; Humphrey.Chip@epamail.epa.gov; Goulet.Joe@epamail.epa.gov; Robert Gensemer; Robert Neely; Benjamin Shorr
Subject: Re: Bioassay Interpretation at Portland Harbor

Eric,
Attached is a spreadsheet that shows the data we have for the 293 tox samples and the calculated effect levels, which were based on the values for the 4 endpoints in table RE-2. As previously mentioned, we did not take into account statistical significance, since it was our understanding that statistical comparisons are not part of the reference envelope approach as described by MacDonald & Landrum.

Have we received any of the information that you requested from John Toll and LWG?

Have a good weekend,

Jay

Blischke.Eric@epamail.epa.gov wrote:

All, I had another voicemail exchange with John, he would like to have this discussion next Tuesday, June 16th. Does that work? I will continue to work on getting some information ahead of time.

Eric

To: Burt Shephard/R10/USEPA/US
Blischke/R10/USEPA/US@EPA
06/08/2009 11:44
cc: AM
Humphrey/R10/USEPA/US@EPA,
jay.field@noaa.gov, Joe
Goulet/R10/USEPA/US@EPA,
rgensemer@parametrix.com
Subject: Re: Bioassay
Interpretation at
Portland

Harbor(Document link:

Eric Blischke)

Eric,

I think Jay's suggestion is a good one, we need to know exactly what LWG has done before we can identify the discrepancies. For now, we don't know what they've done that differs from us. I also think we should bring Don MacDonald into the discussions with LWG.

Surprisingly given my schedule since January, I'm actually in the office all week this week, although most of Wednesday is tied up with Upper Columbia River site meetings.

Best regards,

Burt Shephard
Risk Evaluation Unit
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Environmental
Protection Agency, Region 10 1200 6th Avenue Seattle, WA
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"If your experiment needs statistics to analyze the results, then you ought to have done a better experiment"
- Ernest Rutherford

Eric
Blischke/R10/USE
PA/US

To

Burt

Shephard/R10/USEPA/US@EPA,
06/08/2009 10:35
rgensemer@parametrix.com, Joe
AM
Goulet/R10/USEPA/US@EPA,

jay.field@noaa.gov

cc

Chip

Humphrey/R10/USEPA/US@EPA

Subject

Bioassay

Interpretation at

Portland Harbor

At the AOPC meeting, it became apparent that our interpretation of the sediment bioassay results did not match the LWG's interpretation. I am interested in understanding the basis for this discrepancy. Based on my review of the data, the bioassay results match up with the bins that we established in Table RE-2 in our March 31, 2009 direction to LWG (see previous email). Last week, I put in a call to John Toll to try to understand the LWG's interpretation. Although I did not speak directly with John, he left me a voice mail that described 3 possibilities for the discrepancy:

- 1) The raw response rates differ slightly - e.g., 15% vs. 17%. John does not know why this is the case.
- 2) Significance Testing. The LWG used the biostats software. He indicated that this is a complicated procedure but that the LWG followed the decision tree associated with the software package and did not make any choices that were inconsistent with the decision tree.
- 3) The calculation of the level of the hit (e.g., low, moderate or severe toxicity) based on a comparison to the reference envelope was based on an added 10% to the reference envelope opposed to multiplying by the reference envelope value by 1.1 or 1.2.

I would like to set up a time to discuss this sometime this week. Please let me know when you might be available. I will work with John to hopefully have some information that we can use to focus the discussion.

Thanks, Eric,

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